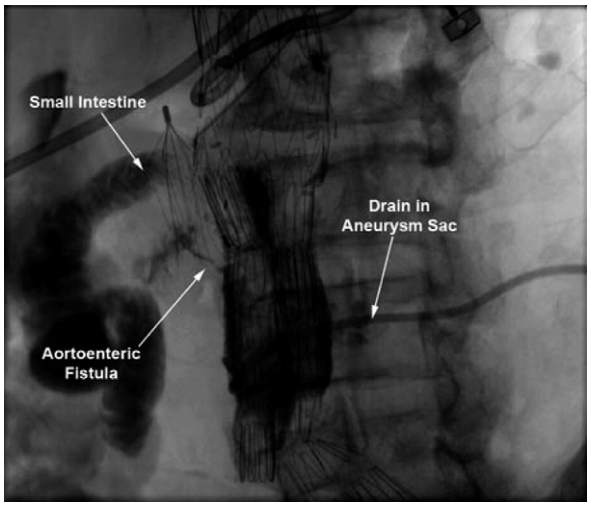
Conclusions: Fistula repair and wide debridement of infected tissue and graft with extra-anatomic bypass are the preferred treatment for infected aortoenteric fistulae. In this case, the external Dacron graft was debrided, and internal endograft was left in place because of the patient's grave status and multiple comoribidities.



Endovascular Management of Multiple Arteriovenous Fistulae Following Failed Laser-Assisted Pacemaker Lead Extraction

King B, Lipsitz E, Gross J, Shah A, et al

A 53-year-old woman with a history of complete heart block and pacemaker dependence was referred for evaluation of new-onset left arm edema. The patient was on anticoagulation for presumed deep vein thrombosis. She had undergone several pacemaker lead changes in the past. One month prior to presentation she had an unsuccessful attempt at laser-assisted pacemaker lead extraction. Physical examination revealed palpable brachial, radial, and ulnar pulses, 1+ pitting edema in the left upper extremity, and a thrill in the left supraclavicular fossa. Duplex and subsequent computed tomography-angiography (CT-A) demonstrated a left subclavian artery to left subclavian vein arteriovenous fistula (AVF).

The patient underwent endovascular repair of the AVF via a left brachial artery cutdown, with placement of a covered stent in the subclavian artery. Although her edema improved postoperatively, the patient had a persistent thrill in the supraclavicular fossa. Review of the original CT-A revealed a previously unrecognized second AVF between the left common carotid artery (CCA) and left brachiocephalic vein. Transfemoral angiography confirmed this suspicion, revealing a wide-mouth AVF between the two vessels. Attempts to cannulate the CCA distal to the fistula were unsuccessful, as the wire and catheter preferentially steered through the AVF and into the enlarged brachiocephalic vein.

The patient subsequently underwent endovascular repair of the carotid-brachiocephalic AVF via a left carotid artery cutdown under general anesthesia with somatosensory evoked potential monitoring. The AVF was successfully excluded by deploying a covered stent in a retrograde fashion from the distal left CCA. Postoperatively, she was placed on aspirin and plavix, and her left arm edema promptly resolved. She remains improved at six-month follow up.

This challenging case describes successful endovascular management of multiple iatrogenic AV fistulae following attempted laser-assisted pacemaker lead extraction. Laser-assisted pacemaker lead extraction may be associated with significant complications. A high degree of suspicion for multiple injuries should be maintained.

Traumatic Arteriovenous Fistula 50 Years after Injury

Chaudry M, Flinn WF, Kim K, Neschis DG

Objectives: Long standing traumatic arteriovenous fistulae (AVF) have been associated with aneurysmal dilatation of the involved artery and vein, congestive heart failure, and limb ischemia. Open surgical repair of these chronic AVF can be challenging due to the elevated venous pressure and surrounding inflammation. A combined open and endovascular approach was used to simplify treatment of this patient.

Methods: A 72-year-old man suffered a pelvic fracture and urethral injury. Computed tomography (CT) scan revealed aneurysmal dilation of the external iliac artery and the external iliac vein. The patient had a history of a gunshot wound to the right groin 50 years prior and had a known AVF that he had been told needed no treatment. Not only would successful repair of the urethral injury obviously been compromised by the large AVF, but the patient had also been recently diagnosed with pulmonary hypertension. Repair of the AVF was clearly indicated.

Results: Arteriography identified the location of the AVF between braches of the deep femoral artery and the femoral venous system, but tortuosity of the external iliac artery prevented delivery of an appropriately sized sheath to the site of the AVF. Open exposure of the common femoral artery allowed delivery of a 22 mm Amplatzer II plug (AGA Medical Corporation, Plymouth, Minn) to the main communicating branch of the deep femoral artery. However, collateral arteries continued to fill the AVF. Open access to the common femoral vein allowed placement of a second 18 mm Amplatzer plug directly at the AV communication on the venous side which resulted in obliteration of the AVF. Follow-up duplex scan confirmed absence of flow in the AVF.

Conclusions: Small iatrogenic AVF have a benign natural history, but larger, traumatic AVF are less likely to close spontaneously and may be associated with significant late local and systemic sequellae. This case allows a rare view of the natural history of a traumatic AVF 50 years after the injury. The adjunct use of endovascular technology significantly reduced the complexity of repair in this case.

Fig. CT scan demonstrating aneurysmal dilation of the external iliac artery and vein.

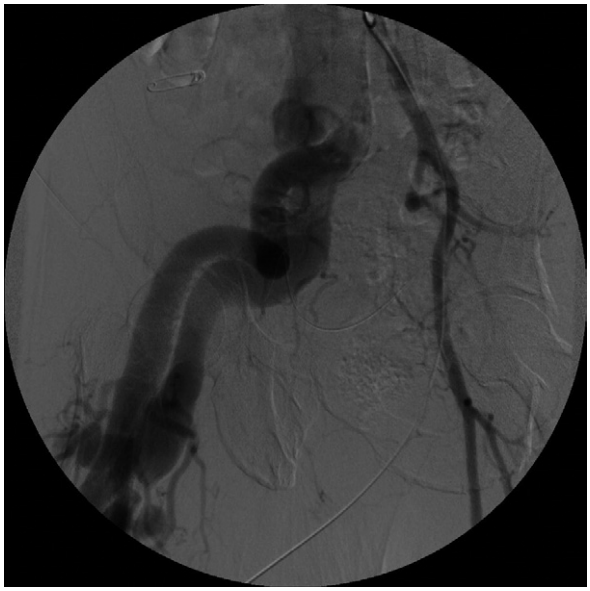


Fig. Angiography showing AVF between the deep femoral artery and the femoral vein.